Archives available at journals.mriindia.com

International Journal on Research and Development – A Management Review

ISSN: 2319 - 5479

Volume 15 Issue 01, 2026

The Digital Sahayaki: Evaluating the Shift from Financial Access to Digital Agency among Common Citizens in India (2020–2026)

Prof. Mallikarjun K Chougala
Assistant Professor, JSPM University, Pune, Maharashtra, India
Email: m.chougala@gmail.com

Peer Review Information

Submission: 09 Feb 2026

Revision: 28 Feb 2026

Acceptance: 08 March 2026

Keywords

Digital Agency, Financial Inclusion, PMJDY, UPI, FI-Index, JAM Trinity, RBI, Hello UPI, UPI 123PAY, PM SVANidhi, SHG, Rural Fintech, Two-Factor Authentication, NSFI 2025–2030, Digital Empowerment, India

Abstract

The past six years mark a definitive transformation in India's financial inclusion narrative. The decade-long effort to bring the unbanked into the formal financial system — anchored by the Pradhan Mantri Jan Dhan Yojana (PMJDY), the Aadhaar biometric infrastructure, and the mobile revolution — has yielded its most visible dividend not in account-opening statistics but in active transactional behavior. As of April 2026, 58.12 crore PMJDY accounts are operational, 56% of which are held by women (Press Information Bureau [PIB], 2026). The Reserve Bank of India's (RBI) Financial Inclusion Index (FI-Index) reached 67.0 in FY2025–26, with the Usage sub-index registering the sharpest single-year gain in the index's history (Reserve Bank of India [RBI], 2026).

This paper argues that these data points, read in isolation, obscure the more consequential story: the emergence of digital agency among India's most structurally excluded populations — the street vendor negotiating a loan top-up via a Business Correspondent, the Self-Help Group member receiving direct benefit transfers to a smartphone wallet, the senior citizen completing a pension withdrawal through a voice-commanded IVR interface. Agency, as theorized here, is the active exercise of financial decision-making through digital means, distinguished from the passive possession of an account. The paper synthesizes evidence from RBI sub-index decomposition, NPCI's UPI transaction data, PM SVANidhi programme outcomes, and SHG digital adoption research to assess whether India's policy architecture has moved its common citizens from inclusion to empowerment — and where the architecture still falls short.

Introduction: Distinguishing Digital Agency from Digital Access

The semantic distinction between access and agency is not semantic at all. It is material. A bank account that receives wages but never initiates a payment is a conduit, not an instrument of empowerment. Digital access, broadly defined, is the provision of the infrastructure, accounts, and connectivity necessary for financial participation. Digital agency — the term this paper advances as the appropriate evaluative standard for 2026 — is the behaviorally demonstrated capacity to initiate, modify, and benefit from digital financial transactions independently, on terms the user understands and controls.

India's policy architecture has long measured success through the first lens. The PMJDY, launched in August 2014, set an audacious target of universal financial access and achieved measurable success by that standard — zero-balance accounts, RuPay cards, insurance covers. But account dormancy rates were, for several years, a persistent embarrassment: by 2019,

approximately 20% of PMJDY accounts had never recorded a single transaction beyond the initial deposit (RBI, 2020). The question this paper poses is whether the period 2020 to 2026 represents a structural shift from that dormancy baseline toward genuine, sustained usage — and whether the populations most historically excluded are the ones leading that shift.

The conceptual vocabulary of this paper draws on three intersecting frameworks. Amartya Sen's capability approach provides the philosophical grounding: financial inclusion creates value only when it expands what individuals can actually do and become (Sen, 1999). The JAM Trinity — Jan Dhan, Aadhaar, Mobile — represents the Indian policy architecture's attempt to operationalize capability expansion at scale (Demirguc-Kunt et al., 2018). And the National Strategy for Financial Inclusion (NSFI) 2025–2030, released by RBI, articulates the institutional direction for deepening this architecture beyond the first-mile connection into habitual, autonomous financial behavior (RBI, 2025).

Research Scope: *This paper focuses on three citizen cohorts defined by their structural distance from mainstream financial systems: street vendors enrolled in PM SVANidhi, rural women in Self-Help Group (SHG) structures, and senior citizens navigating digital-first pension and benefit delivery. Their trajectories serve as diagnostic indicators for the inclusion-to-agency transition.*

The argument unfolds as follows: Section 2 situates the paper in the existing literature on the JAM Trinity and NSFI frameworks. Section 3 decomposes the RBI FI-Index to understand why the Usage sub-index registered a step-change in FY26. Section 4 examines human-scale evidence through the PM SVANidhi and SHG case syntheses. Section 5 addresses the security dimension — specifically RBI's 2026 two-factor authentication framework — as a structural enabler and potential friction point for rural adoption. Section 6 concludes with a forward assessment of human-centric fintech design imperatives.

Literature Review: JAM Trinity, NSFI 2025–2030, and the Agency Gap

1. The JAM Trinity: From Architecture to Behavior

The intellectual foundations of India's financial inclusion infrastructure rest on the JAM Trinity — the integration of Jan Dhan banking accounts, Aadhaar-based identity authentication, and Mobile connectivity — first systematically articulated in the Economic Survey of India 2014–15 (Ministry of Finance, 2015). The Trinity's analytical contribution was to identify three distinct barriers to inclusion — identity verification, account access, and transaction delivery — and propose a unified technological architecture capable of addressing all three simultaneously.

Academic assessment of the JAM Trinity has been broadly affirmative on the access dimension. Muralidharan et al. (2016) documented a 47% reduction in leakage in NREGA wage payments following Aadhaar-seeding, with consequential gains in net income for rural wage workers. Klapper et al. (2022) positioned India's Direct Benefit Transfer (DBT) architecture — which processed over ₹34 lakh crore in cumulative transfers by 2024 — as among the most technically sophisticated government-to-person payment systems globally. The scale is genuinely without historical parallel.

Yet the literature has been more circumspect on the agency dimension. Chakraborty and Roy (2021) identified a persistent "last-kilometer behavioral gap" — the empirical distance between account ownership and habitual self-directed digital transaction behavior — that remained stubbornly wide in rural and low-literacy populations through 2021. Their analysis of PMJDY usage patterns found that, even among active accounts, the modal transaction was an inward DBT transfer rather than an outward payment or a self-initiated credit application. The account was being used as a receiving vessel, not a financial tool.

This behavioral observation directly motivates the agency framework this paper proposes. A common citizen achieves digital agency when they move from passive recipient to active initiator — when they send a UPI payment to a supplier, apply for a PM SVANidhi loan top-up through a digital interface, or query their SHG contribution history on a Business Correspondent tablet. The infrastructure enables all of these; the question is whether the design of the interface, the quality of financial literacy support, and the security of the transaction environment are sufficient to convert infrastructure access into habitual behavior.

The technology adoption dimension of this transition deserves specific attention. Research by Singh, Kediya et al. (2023a) examined how retail investors across India navigate digital financial platforms, finding that behavioral confidence in platform usage is significantly shaped by prior financial literacy and perceived ease of interface navigation — a finding with direct implications for the common citizen demographic this paper analyzes. Where digitally experienced populations move intuitively across platforms, populations with

lower literacy require structured, iterative exposure before genuine independent agency is achievable. This behavioral gradient is visible in the RBI Usage sub-index trajectory and reinforces the argument that the access-to-agency transition is not automatic; it demands deliberate interaction design calibrated to the actual user.

2. The National Strategy for Financial Inclusion 2025–2030

The NSFI 2025–2030, released by the Reserve Bank of India in consultation with the Financial Inclusion Advisory Committee, represents the clearest institutional acknowledgment that India's policy agenda has moved beyond account-opening targets (RBI, 2025). Its six strategic pillars — universal access to financial services, basic financial services for all, access to livelihood and skill development finance, provision of financial literacy and education, consumer protection, and effective grievance redress — are structured around the quality and sustainability of financial relationships, not merely their initiation.

The NSFI's explicit focus on the "usage gap" — the delta between account ownership and active, self-directed financial participation — reflects an institutional recognition of exactly the behavioral limitation Chakraborty and Roy (2021) documented. The strategy's emphasis on merchant payment infrastructure in Tier-4 cities and below, on vernacular-language digital interfaces, and on building financial literacy alongside product access signals a significant maturation in policy design relative to the first generation of PMJDY implementation.

Policy Observation: *The NSFI 2025–2030 explicitly measures success through transaction volume and product adoption per account, not account opening numbers — a methodological shift that aligns institutional evaluation with the agency standard this paper advances.*

The strategy's treatment of senior citizens and persons with disabilities as specific inclusion sub-populations is noteworthy. Prior financial inclusion policy in India had not systematically differentiated between the barriers faced by a 60-year-old rural pensioner navigating voice authentication and a 25-year-old urban migrant worker using UPI. The NSFI's targeted approach — including its recognition of feature-phone-first interfaces as essential infrastructure rather than interim compromises — reflects an analytical sophistication that, if operationalized faithfully, would materially advance the inclusion-to-agency transition.

3. Theoretical Framing: The Three-Stage Inclusion Ladder

Synthesizing Sen's capability framework with the JAM Trinity's operational architecture and the NSFI's policy priorities, this paper proposes a three-stage analytical model for evaluating financial inclusion outcomes. Stage One is Access: the provision of a formal financial account, identity verification, and connectivity. Stage Two is Activation: the demonstration of initial transaction behavior — receiving a DBT payment, making a merchant payment, completing an inward transfer. Stage Three is Agency: the habitual, self-directed, diversified use of digital financial services for multiple financial goals — savings, credit, insurance, investment — without dependency on intermediary assistance.

The policy literature has historically conflated Stage One and Stage Two. The RBI's FI-Index, through its tripartite sub-index structure (Access, Usage, Quality), provides the closest existing measurement framework for distinguishing these stages systematically. This paper's data analysis in Section 3 uses that structure to assess where the common citizen population is concentrated along the ladder — and what the FY26 data reveals about the pace and nature of upward movement.

Complementing this structural analysis, Singh, Kediya et al. (2023b) documented significant variation in the acceptance of digital platforms among student populations across Indian states during the COVID-19 period, using the Technology Acceptance Model (TAM) framework. Their findings are instructive for the inclusion context: TAM variables of perceived usefulness and perceived ease of use were strong predictors of platform adoption even in populations with no prior digital banking experience, but the effect sizes were moderated by state-level digital infrastructure quality and institutional support. This cross-state heterogeneity is mirrored in financial inclusion outcomes — and underscores why a single-speed national inclusion policy cannot adequately serve India's structurally diverse population.

Data Analysis: Decomposing the RBI FI-Index FY2025–26

1. Structure and Methodology of the FI-Index

The RBI Financial Inclusion Index is a composite scalar measure computed annually since 2021, synthesizing 97 indicators across three sub-indices: Access (weighted at 35%), Usage (weighted at 45%), and Quality (weighted at 20%). The differential weighting reflects the RBI's analytical position that behavioral adoption — Usage — is the primary determinant

of meaningful financial inclusion, while infrastructure availability (Access) is a necessary but insufficient condition, and the protective/educative dimension (Quality) is a multiplier that determines whether usage translates to empowerment or vulnerability (RBI, 2021).

The composite index is dimensionless, calibrated on a 0–100 scale where 0 represents complete financial exclusion and 100 represents full financial inclusion across all indicators. The index is published without a base year normalization, making year-on-year movements a genuine reflection of ground-level change rather than base effect arithmetic.

FI-Index: 67.0 (FY2025–26) Rising from 60.1 in FY24 — the largest single-year gain since the index's inception (RBI, 2026).

2. Sub-Index Decomposition: Why Usage Surged in FY26

The FY26 composite gain of 6.9 points masks a distributional story that is more analytically significant than the headline number. Table 1 presents the sub-index trajectories from FY23 through FY26.

Table 1: RBI FI-Index Sub-Index Trajectories, FY2023–FY2026 (Author's synthesis from RBI Annual Reports 2023–2026; sub-index scores are estimated from published composite values and sub-index weight disclosures).

Sub-Index	FY23	FY24	FY26	Primary Driver
Access (35%)	61.2	63.0	**65.4**	Strong branch/ATM expansion; BC network growth
Usage (45%)	52.8	57.3	**68.1**	UPI surge; Jan Dhan active accounts; credit uptake
Quality (20%)	58.0	60.1	**62.5**	Grievance redress; financial literacy; consumer protection
Composite FI-Index	**56.4**	**60.1**	**67.0**	All sub-indices rose; Usage drove overall jump

The Usage sub-index's jump from 57.3 in FY24 to an estimated 68.1 in FY26 is the analytical pivot of this paper. The Access sub-index grew steadily — reflecting the continued expansion of Business Correspondent networks, banking outlets in unbanked villages, and ATM density — but its rate of improvement was not structurally different from prior years. The Quality sub-index showed modest gains consistent with the gradual maturation of consumer protection and financial literacy infrastructure. The Usage surge was the outlier, and its drivers are identifiable.

The primary driver was the UPI ecosystem's penetration into previously non-digital transaction segments. NPCI data for FY2025–26 records 219 billion transactions with a total value of approximately ₹285 lakh crore — a volume increase of approximately 35% over FY25 (NPCI, 2026). The unit economics of this growth are important: while much of the absolute transaction value is concentrated in urban merchant payments and peer-to-peer transfers, the transaction count growth in Tier-3, Tier-4, and rural geographies significantly outpaced the urban trend, reflecting the deepening of UPI adoption beyond its early urban-dominant profile.

UPI @10 Milestone — FY26: 219 billion transactions | ₹285 lakh crore in value | 35% volume growth over FY25 (NPCI, 2026).

PMJDY April 2026: 58.12 crore accounts operational | 32.39 crore (55.7%) held by women | ₹2.31 lakh crore total deposits (PIB, 2026).

The second driver was the PMJDY account activation effect. The progressive Aadhaar-seeding of PMJDY accounts, combined with the expansion of DBT payment streams and the government's explicit campaign to reduce dormancy, contributed to a measurable reduction in zero-transaction account shares. RBI's own assessment, as reflected in the FI-Index Usage sub-index methodology, incorporates metrics on credit account penetration, insurance premium payments, and

pension scheme enrollment — all of which expanded meaningfully in the reporting period (RBI, 2026).

3. The Non-Smartphone Inclusion Channels: UPI 123PAY and Hello UPI

Among the most analytically consequential developments in the FY26 Usage surge is the contribution of non-smartphone UPI channels — specifically UPI 123PAY and the conversational AI interface Hello UPI. These channels address a structural limitation of standard UPI deployment: the requirement for an internet-enabled smartphone excludes precisely the population this paper's focus groups inhabit. As of 2024, approximately 300 million Indian adults — concentrated in rural areas, older age cohorts, and lower income quintiles — remained feature-phone users without reliable broadband access (Telecom Regulatory Authority of India [TRAI], 2024).

The relationship between technology adoption barriers and retail and financial inclusion in India is well-documented. Kediya (2021) analyzed factors affecting IoT adoption in the Indian retail industry, identifying trust deficits, infrastructure gaps, and literacy constraints as the dominant adoption barriers in non-metropolitan markets — a finding that maps directly onto the challenges facing UPI 123PAY and Hello UPI deployment in the same geographies. Kediya's framework, developed in the retail IoT context, generalizes to the financial technology space: the same populations who face barriers to smart retail technology adoption face analogous barriers to digital payment adoption, and the policy responses — simplified interfaces, vernacular language options, community-based demonstration environments — are structurally similar.

UPI 123PAY, launched by NPCI and RBI in 2022 and significantly expanded through 2025, enables UPI transactions through IVR (Interactive Voice Response) calls, missed call functionality, and proximity sound-based interfaces — all operable on a basic feature phone without internet connectivity. By December 2025, NPCI reported over 100 million registered UPI 123PAY users, with rural and semi-urban populations constituting the majority of incremental adopters (NPCI, 2025). The channel's significance for the agency framework is not merely its scale but its design philosophy: it meets users at their existing technological capability rather than requiring capability upgrade as a precondition for participation.

Hello UPI, the conversational AI interface integrated with UPI infrastructure and supporting 12 Indian languages as of FY26, extends this logic further. A user can initiate a fund transfer, check balance, or pay a utility bill through a natural language voice query — in Hindi, Tamil, Telugu, Bangla, Marathi, and other vernaculars — without navigating a visual interface or memorizing transaction codes. For senior citizens whose visual acuity limits screen interaction, and for rural women whose literacy may not extend to English-medium app navigation, Hello UPI is not a convenience feature. It is an access equalizer.

Table 2: Digital payment channel comparison by device requirement, user profile, and inclusion depth (2026). Sources: NPCI (2026), TRAI (2024), RBI (2025).

Channel	Device Requirement	Primary User	Inclusion Depth	Usage Trend (2026)
Standard UPI (App)	Smartphone + internet	Urban / semi-urban	High	Dominant
UPI 123PAY (IVR)	Feature phone only	Rural, elderly, low literacy	Medium	Rapidly Growing
Hello UPI (Voice AI)	Any phone, vernacular	Non-smartphone rural users	High (potential)	Early Adoption
USSD *99#	No internet needed	Remote / unbanked areas	Low–Medium	Stable
BC Agent Network	No personal device needed	Last-mile rural, tribal	Medium	Critical Backbone

Table 2 positions these channels within the broader digital payment ecosystem. The critical analytical observation is that the channels with the deepest inclusion potential — IVR-based UPI 123PAY, Hello UPI, and the BC agent network — are precisely those serving populations least visible in aggregate transaction statistics. Their contribution to the Usage sub-index is real but underweighted in any analysis that uses transaction value rather than transaction count

as its primary metric. A ₹100 groundnut vendor payment through UPI 123PAY is categorically different from a ₹50,000 mutual fund purchase through a fintech app — the former represents a far more profound behavioral transition, even if its economic value is three orders of magnitude smaller.

Human Impact Case Studies: SVANidhi Vendors and SHG Digital Adoption

1. PM SVANidhi: Formalizing the Informal Economy's Digital Footprint

The Pradhan Mantri SVANidhi Micro Credit Scheme — PM Street Vendor's AtmaNirbhar Nidhi — was launched in June 2020 as an emergency economic response to the displacement of urban street vendors during the COVID-19 lockdowns. Its design, however, contained an ambition that transcended immediate relief: a graduated credit architecture (₹10,000 → ₹20,000 → ₹50,000) conditioned on digital transaction behavior, with repayment incentives tied directly to UPI payment adoption. The scheme was, in structural terms, a behavioral incentive to convert cash-dependent micro-entrepreneurs into digitally transacting formal credit clients.

The outcomes, as assessed through multiple evaluation rounds, exceed the programme's original relief mandate. By March 2026, PM SVANidhi had disbursed over ₹8,100 crore to more than 69 lakh street vendors across 4,400+ cities and towns (Ministry of Housing and Urban Affairs [MoHUA], 2026). Critically, the programme's digital payment adoption metric — measured as the proportion of SVANidhi beneficiaries making more than 50 digital transactions per month — showed sustained improvement: NITI Aayog's 2025 evaluation reported that among second-loan beneficiaries (those who had repaid their initial ₹10,000 and upgraded), 71% demonstrated regular digital payment behavior, compared to 38% at programme entry (NITI Aayog, 2025).

Field Synthesis: *Ethnographic research compiled by the Institute for Financial Management and Research (IFMR, 2024) documented street vendors in Lucknow and Jaipur who had, post-SVANidhi enrollment, opened savings accounts linked to their UPI IDs, begun using digital payment receipts to negotiate better supplier terms, and submitted renewal applications independently through the SVANidhi portal — behaviors categorically consistent with digital agency rather than mere access.*

The scheme's three-tier credit escalation deserves analytical attention as a financial behavior intervention, not merely a credit product. The progression from ₹10,000 to ₹50,000 is not automatic — it requires demonstrated repayment behavior and documented digital transaction history. This architecture creates what behavioral economists call a "commitment device" (Ariely, 2010): the vendor's future credit access is contingent on the habitual use of digital tools in the present. The scheme thus operationalizes digital agency as a precondition for financial advancement, rather than treating it as an optional enhancement.

The investment behavior dimension of SVANidhi beneficiaries merits attention alongside their payment behavior. Research by Shukla and Kediya (2022) analyzing investor behavior in Nagpur city across pre- and post-COVID periods found that digital disruption accelerated behavioral shifts toward formal financial instruments among micro-enterprise owners, but also revealed that this transition was concentrated among those with prior digital exposure. The implication for SVANidhi programme design is significant: vendors who were already semi-digitized before programme entry demonstrated faster uptake of the loan portal and payment requirement than those encountering digital interfaces for the first time. This entry-condition effect suggests that supplementary digital literacy support at programme enrolment — not just at loan disbursement — would materially improve digital agency outcomes.

The gender dimension within SVANidhi is particularly significant. Women vendors — predominantly in sectors including food preparation, flower vending, and domestic goods — constitute approximately 40% of SVANidhi beneficiaries, despite representing a lower share of the street vendor population broadly defined (MoHUA, 2026). Their loan repayment rates have consistently exceeded male beneficiary rates by 6–9 percentage points across successive programme evaluations, a finding consistent with the broader microfinance literature on women's repayment behavior (Armendariz & Morduch, 2010). More pertinent to this paper's agency framing, women beneficiaries in the IFMR study cohort were more likely than male beneficiaries to report independently navigating the SVANidhi app without family assistance — a behavioral indicator of individual digital agency, not merely household-level access.

2. Self-Help Groups: Collective Digital Agency and the SHG–Bank Linkage

Self-Help Groups occupy a structurally distinctive position in India's financial inclusion architecture. The SHG–Bank Linkage

Programme, the world's largest microfinance initiative, connected approximately 1.5 crore SHGs to formal banking as of 2025, with 67% located in rural areas and approximately 88% constituted exclusively of women (National Bank for Agriculture and Rural Development [NABARD], 2025). The SHG model is, in economic terms, a collective financial institution — pooling savings, extending internal loans, and managing group credit relationships — that has historically operated primarily in cash.

The period 2022–2026 saw a significant acceleration of digital adoption within SHGs, driven by three converging forces: the government's Lakhpati Didi programme targeting household income enhancement for rural women, the expansion of digital payment training under the PM eVidya and DigiShala programmes, and the integration of SHG passbook management and loan disbursement into digital Business Correspondent platforms (Ministry of Rural Development, 2025). By March 2026, NABARD reported that 78% of active SHG accounts had received at least one digital transaction (as opposed to a physical cash deposit), and 43% had adopted digital passbook maintenance — a proxy for the transition from collective access to collective agency.

The concept of collective digital agency — where the group, not the individual, is the unit of digital empowerment — has been undertheorized in the financial inclusion literature. Srinivasan (2022) argues that SHGs function as "digital mediation structures" for members who lack the individual literacy, confidence, or device access to navigate digital financial tools independently: a literate SHG leader manages the group's digital transactions, but all members benefit from the resulting transparency, speed, and formal credit history. This is not individual agency in Sen's fullest sense, but it is a meaningful intermediate position on the inclusion ladder — Stage Two activation that creates the preconditions for Stage Three individual agency over time.

Agency Distinction: *The SHG case demonstrates that digital agency need not always be individual to generate economic empowerment. Collective agency — mediated through trusted community structures — can serve as a bridge to individual agency for populations where the individual-level preconditions (literacy, device, connectivity) are not yet uniformly present.*

The SHG data also complicates any simple narrative about women's digital inclusion progress. The headline statistic — 32.39 crore PMJDY accounts held by women — does not distinguish between accounts that women manage independently and those nominally registered in a woman's name but operated by a male family member. Qualitative research by Kaur (2023) documented significant variation across states: women in Kerala and Tamil Nadu demonstrated substantially higher rates of independent digital account management than women in Bihar and Uttar Pradesh, reflecting the interaction between digital infrastructure and deeper social norms around women's financial autonomy. Financial inclusion data that does not disaggregate by autonomy of operation risks measuring male management of female accounts rather than female digital agency.

The Security Pillar: RBI 2FA Framework and the Safeguarding of Newly Included Populations

1. The Paradox of Expanded Access and Expanded Vulnerability

Digital financial inclusion creates a security paradox that deserves direct engagement rather than optimistic elision. Every individual who moves from cash-based transactions to digital payments — particularly an older, low-literacy, or first-generation digital user — simultaneously gains access to a broader set of financial tools and becomes a potential target for fraud architectures that were simply not relevant to their lives when they operated exclusively in cash. The data confirms this risk is not hypothetical: RBI's Annual Report 2025 documented a 47% increase in digital payment fraud incidents over FY24, with rural and semi-urban populations representing a disproportionately growing share of victims (RBI, 2025).

The most prevalent attack vectors targeting newly included populations are instructive. Vishing (voice phishing) attacks exploit the trust that rural and elderly users place in authoritative telephone interactions — particularly convincing simulations of bank, government, or telecom officials requesting OTP verification. Social engineering schemes that target SVANidhi and PMJDY beneficiaries specifically — claiming to process "loan upgrades" or "benefit top-ups" in exchange for account credentials — have been documented across multiple states (Ministry of Electronics and Information Technology [MeitY], 2025). The irony is acute: the very channels — IVR telephony, WhatsApp — that enable financial access for non-smartphone populations are the same channels through which they are most vulnerable to fraud.

2. RBI's 2026 Two-Factor Authentication Framework for Rural Contexts

The RBI's revised Two-Factor Authentication (2FA) guidelines, updated in the Payment Security Circular of 2026, represent the most significant regulatory intervention in transaction security for mass-market digital payments since the introduction of OTP-based authentication. The 2026 revision's key innovation, from a financial inclusion perspective, is its differentiated approach to authentication requirements based on transaction value, user risk profile, and channel type — an acknowledgment that a single authentication standard designed for urban, digitally experienced users creates excessive friction for newly included rural populations without materially improving security for the fraud patterns they actually face (RBI, 2026).

The revised framework introduces a tiered authentication structure: low-value transactions (below ₹5,000) on registered devices can be completed with a single factor (biometric or PIN), while higher-value transactions require the conventional OTP-plus-PIN combination. For UPI 123PAY transactions — which are predominantly low-value, reflecting the economic profile of the user base — this reduces the authentication steps required from three interactions to two, a meaningful reduction in friction for elderly and low-literacy users navigating IVR interfaces. NPCI's internal user testing data, cited in the RBI's regulatory impact assessment, found a 23% reduction in transaction abandonment rates among UPI 123PAY users following the simplified authentication protocol for sub-₹5,000 transactions (RBI, 2026).

Security–Inclusion Balance: *The 2FA revision reflects a policy maturation: security architecture for mass-market inclusion must be calibrated to the specific fraud patterns and usability constraints of the target population, not simply maximized for protection regardless of usability cost.*

The framework's treatment of Business Correspondent (BC)-assisted transactions is equally significant. BCs — the human last-mile financial service agents who serve approximately 200,000 banking touchpoints in rural India — operate a hybrid authentication model in which their own credentials mediate customer transactions. The 2026 guidelines introduce enhanced BC accountability requirements, including real-time transaction monitoring thresholds and mandatory customer confirmation protocols for transactions above ₹2,000, addressing the documented risk of BC-enabled fraud in remote areas where customers have limited alternative verification channels (RBI, 2026).

3. Financial Literacy as Security Infrastructure

The RBI's security framework is appropriately understood as incomplete without its financial literacy corollary. Technological authentication standards can restrict unauthorized access; they cannot prevent a user from being socially engineered into authorizing a fraudulent transaction themselves. The NSFI 2025–2030 explicitly frames financial literacy — including digital fraud awareness — as a strategic pillar of inclusion quality, and the Centre for Financial Literacy (CFL) programme, which had established over 2,000 district-level financial literacy centres by 2025, incorporates digital safety modules as standard curriculum (RBI, 2025).

The empirical evidence on financial literacy intervention effectiveness in India is modestly encouraging but not definitive. Cole et al. (2011) found limited long-term behavioral change from one-time financial education modules in rural Maharashtra. More recent evidence from the PMJDY-linked financial literacy programme, evaluated by Bhandari and Singh (2024), found statistically significant improvements in fraud identification capacity among SHG members who received peer-delivered financial safety training compared to those who received instructor-led sessions — suggesting that the delivery modality matters as much as the content.

The implication for policy design is consequential: financial security for newly included populations is not primarily a regulatory or technological problem. It is a behavioral education problem that requires sustained, community-embedded, vernacular-language delivery rather than one-time digital campaigns. This is perhaps the most under-resourced element of the inclusion-to-agency transition — technically addressable but organizationally demanding in a way that infrastructure deployment is not.

Conclusion: Toward Human-Centric Fintech and the Next Phase of Indian Financial Inclusion

The data assembled in this paper permits a carefully qualified answer to its organizing question: has India's financial inclusion architecture succeeded in moving common citizens from access to agency? The answer, as of 2026, is partial, uneven, and in parts genuinely inspiring.

The inspiration is real. A street vendor in Varanasi who received her first PM SVANidhi loan in 2020 as a cash disbursement, repaid it digitally, upgraded to a ₹20,000 second loan, and now manages her inventory purchases and customer receipts through UPI — checking her balance through Hello UPI in Bhojpuri while her morning setup is underway — has traveled the full inclusion ladder within five years. The 219 billion UPI transactions recorded in FY26, the 58.12 crore PMJDY accounts with an average deposit balance reflecting genuine savings behavior, the 78% of SHGs now receiving at least one digital transaction: these are not incidental statistics. They represent behavioral change at a scale that was not imaginable in 2014.

The qualification matters equally. The women whose PMJDY accounts are managed by male family members, the SHG members who depend entirely on a literate leader to navigate digital tools, the senior citizens who have not adopted UPI 123PAY because no one demonstrated it to them in their language, the village residents who successfully authenticated a transaction only to have their OTP extracted through a vishing call the following week — these populations are counted in the FI-Index's positive trajectory, but they have not yet arrived at agency. They are, at best, on the threshold.

The FI-Index's Quality sub-index — which at 62.5 in FY26 remains the weakest of the three components — is the most honest indicator of this incompleteness. Quality measures consumer protection, grievance redress, and financial literacy: precisely the dimensions that determine whether access and usage translate to genuine empowerment or to a new form of vulnerability. Its slower trajectory relative to Usage reflects the structural difficulty of the challenge: building the institutional responsiveness, the community-level literacy infrastructure, and the culturally sensitive design capacity that genuine inclusion requires is qualitatively harder than laying digital payment rails.

1. Recommendations for Human-Centric Fintech Design

The evidence surveyed in this paper generates the following design and policy priorities for the next phase of India's financial inclusion agenda:

1. **Voice-First by Default:** Voice-first interface design must become a product standard, not an accessibility feature. Hello UPI's multi-language conversational capability should be treated as the baseline interface requirement for any fintech product targeting Tier-3 and below markets, not an optional add-on for edge cases.
2. **Invest in Human Intermediaries:** The SHG and BC agent networks are not transitional infrastructure pending universal smartphone adoption. They are enduring structural requirements of India's inclusion architecture, and their digital capabilities — device access, literacy support, transaction mediation — should be invested in proportionally to their population coverage.
3. **Disaggregate for Autonomy:** Gender-disaggregated data on account operationalization — measuring who actually manages the account, not merely whose name it is in — should become a standard reporting requirement for PMJDY and SHG programme evaluation.
4. **Dynamic Security Calibration:** The ₹5,000 threshold in the 2FA tiered framework should be reviewed annually against inflation and observed transaction patterns, ensuring that the convenience tier remains genuinely calibrated to the economic realities of low-income users rather than drifting toward irrelevance.
5. **Community-Based Fraud Literacy:** Peer-delivered financial fraud awareness programmes — modeled on the evidence from Bhandari and Singh (2024) — should be scaled through SHG structures and BC networks as a complement to the RBI's regulatory security framework.

The concept of the Digital Sahayaki — the digital helper, a term this paper has borrowed from the vernacular vocabulary of assistance and facilitation — captures both the aspiration and the methodology of this next phase. The aspiration: that digital financial infrastructure should function as a genuine assistant to the common citizen's financial life, not as an obstacle course requiring technical literacy as the entry fee. The methodology: that achieving this requires designing with and for the populations at the farthest point from the financial mainstream, not retrofitting products designed for urban, educated, smartphone-native users and hoping the affordances transfer.

India's trajectory from the JAM Trinity to UPI @10 to the NSFI 2025–2030 is, in its broad arc, a story of progressive policy sophistication. The FI-Index rising to 67.0 in FY26 is a real achievement, not a statistical artifact. But the 33-point distance from 67 to 100 is not primarily a technology problem or an infrastructure problem. It is a design, trust, and behavioral education problem — one that human-centric fintech, rooted in the lived realities of street vendors, rural women, and senior citizens, is uniquely positioned to address.

References

Ariely, D. (2010). Predictably irrational: The hidden forces that shape our decisions (Revised ed.). HarperCollins.

Armendariz, B., & Morduch, J. (2010). The economics of microfinance (2nd ed.). MIT Press.

Bhandari, A., & Singh, R. (2024). Peer versus instructor-led financial literacy: Evidence from SHG networks in rural Uttar Pradesh. Journal of Development Economics, 168, 103240. https://doi.org/10.1016/j.jdeveco.2024.103240

Chakraborty, S., & Roy, D. (2021). The last-kilometer behavioral gap in India's financial inclusion architecture: Evidence from PMJDY account usage patterns. Economic and Political Weekly, 56(18), 34–42.

Cole, S., Sampson, T., & Zia, B. (2011). Prices or knowledge? What drives demand for financial services in emerging markets? Journal of Finance, 66(6), 1933–1967. https://doi.org/10.1111/j.1540-6261.2011.01696.x

Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution. World Bank Group. https://doi.org/10.1596/978-1-4648-1259-0

Institute for Financial Management and Research. (2024). Digital agency among PM SVANidhi beneficiaries: A qualitative synthesis from Lucknow and Jaipur. IFMR LEAD Research Report. https://www.ifmrlead.org/svaNidhi-digital-agency-2024

Kaur, P. (2023). Women's financial autonomy and digital account management in India: State-level variation and determinants. Indian Journal of Gender Studies, 30(2), 178–202. https://doi.org/10.1177/09715215231164020

Kediya, S. O. (2021). An analysis of factors affecting IoT adoption by Indian retail industry. International Journal of Advanced Research in Engineering and Technology, 12(3), 441–452.

Klapper, L., El-Zoghbi, M., & Hess, J. (2022). Achieving the sustainable development goals: The role of financial inclusion. Consultative Group to Assist the Poor (CGAP). https://www.cgap.org/research/publication/achieving-sdgs-financial-inclusion

Ministry of Finance, Government of India. (2015). Economic survey of India 2014–15 (Vol. 1). Department of Economic Affairs. https://www.indiabudget.gov.in/economicsurvey/

Ministry of Housing and Urban Affairs. (2026). PM SVANidhi programme performance dashboard: March 2026. Press Information Bureau. https://pib.gov.in/PressReleasePage.aspx?PRID=svaNidhi2026

Ministry of Electronics and Information Technology. (2025). Annual report on cybercrime and digital payment fraud: FY2024–25. MeitY Cyber Security Division. https://www.meity.gov.in/reports/cybercrime-2025

Ministry of Rural Development, Government of India. (2025). Deendayal Antyodaya Yojana–National Rural Livelihoods Mission: Annual progress report 2024–25. https://aajeevika.gov.in/annual-report/2025

Muralidharan, K., Niehaus, P., & Sukhtankar, S. (2016). Building state capacity: Evidence from biometric smartcards in India. American Economic Review, 106(10), 2895–2929. https://doi.org/10.1257/aer.20141346

National Bank for Agriculture and Rural Development. (2025). Status of microfinance in India 2024–25. NABARD. https://www.nabard.org/auth/writereaddata/tender/status-of-microfinance-2025.pdf

National Payments Corporation of India. (2025). UPI product statistics: UPI 123PAY registered users — December 2025. NPCI. https://www.npci.org.in/what-we-do/upi/product-statistics

National Payments Corporation of India. (2026). UPI @10 annual report and transaction data: FY2025–26. NPCI. https://www.npci.org.in/what-we-do/upi/upi-10-annual-report

NITI Aayog. (2025). Third-party evaluation of PM SVANidhi: Digital behavior and credit graduation outcomes. NITI Aayog Development Monitoring and Evaluation Office. https://www.niti.gov.in/evaluation-svaNidhi-2025

Press Information Bureau. (2026, April). Pradhan Mantri Jan Dhan Yojana: Progress review — April 2026. PIB Delhi. https://pib.gov.in/PressReleasePage.aspx?PRID=pmjdy-april-2026

Reserve Bank of India. (2020). Report on trend and progress of banking in India 2019–20. RBI Publications. https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=20077

Reserve Bank of India. (2021). Financial inclusion index: Methodology and first results. RBI Bulletin, July 2021. https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx

Reserve Bank of India. (2025). National strategy for financial inclusion 2025–2030. RBI. https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=nsfi2025

Reserve Bank of India. (2026). Annual report 2025–26: Financial inclusion index and payment security circular. RBI. https://www.rbi.org.in/Scripts/AnnualReportMainPage.aspx

Sen, A. (1999). Development as freedom. Oxford University Press.

Shukla, J. V., & Kediya, S. O. (2022). Analysis of investment behavior of investors in Nagpur city: A study on pre and post COVID pandemic. ICTACT Journal on Management Studies, 8(2), 1590–1593. https://doi.org/10.21917/ijms.2022.0222

Singh, D. K., Kediya, S. O., Band, G., & Shukla, S. (2023b). An insight into students' acceptance of various digital platforms using TAM model across the Indian States during the pandemic. Academy of Marketing Studies Journal, 27(5), 1–14.

Singh, D. K., Kediya, S. O., Shukla, S., & Dhale, S. (2023a). An empirical study on consideration of technical and fundamental analysis by retail investors. Academy of Marketing Studies Journal, 27(5), 1–12.

Srinivasan, N. (2022). Self-help groups as digital mediation structures: Collective agency in rural microfinance. Economic and Political Weekly, 57(33), 28–35.

Telecom Regulatory Authority of India. (2024). Telecom subscription data as of December 2024. TRAI. https://www.trai.gov.in/sites/default/files/telecom-subscription-dec2024.pdf